September 1974

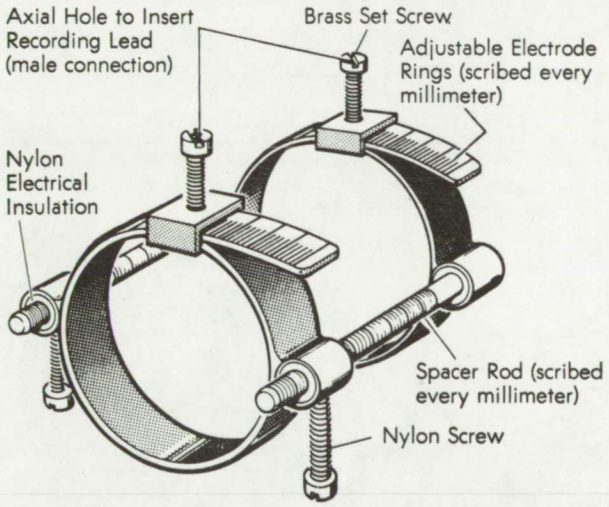
B74-10172

NASA TECH BRIEF

Ames Research Center

Finger Recording Electrode System for Electrical Impedance Plethysmograph

A rigid electrode system has been developed to facilitate location of the recording electrodes of an impedance plethysmograph that is used for measuring the flow of blood in a finger segment; electrodes



can be relocated accurately and the volume of the finger segment under study can be determined precisely. Moreover, the new system ensures good electrical contact and minimizes movement artifacts in the plethysmograph trace because the finger segment is held firmly.

Prior to application, the brass and nylon screws indicated in the diagram are loosened, the adjustable electrode rings (gold-plated stainless steel) are expanded to fit over the finger segment, and a distance between electrodes is established so that circuit impedance is within the range of the plethysmograph. Then the electrode system is slipped over the desired finger segment and the electrode rings are clamped snugly but not so tight as to impede blood flow; the set screws are then tightened. Measurements are made of the distance between the finger cuticle and the distal electrode band; the electrode circumference and the distance between electrodes is recorded from the scribed portions of the electrode system. Finally, electrode leads are inserted into the two brass set screws.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Ames Research Center
Moffett Field, California 94035
Reference: TSP 74-10172

Patent status:

This invention is owned by NASA, and a patent application has been filed. Inquiries concerning nonexclusive or exclusive license for its commercial development should be addressed to:

NASA Patent Counsel
Mail Code 200-11A
Ames Research Center
Moffett Field, California 94035

Source: Leslie D. Montgomery and
Dwight L. Moody, Jr.
Ames Research Center
(ARC-10816)

Category 05